

REMARKS

A total of 28 claims remain in the present application. The present remarks/arguments are presented in response to the Office Action mailed October 30, 2007, wherefore reconsideration of this application is requested.

Referring now to the text of the Office Action, claims 1-8, 10-15, 17-25 and 27-29 stand rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent No. 6,275,492.(Zhang).

At Section 1 of the Detail Action, the Examiner argues as follows:

- Augment A: Webster defines the term “rule” as “a prescribed guide for conduct or action”. Forwarding data can be interpreted by one skilled in the art as differing forwarding “rules” since each forwarding data contains differing guides for action.”
- Argument B: “the propagation of LSAs is clearly taught by Zhang using routing tables generated by each router. In column 3, lines 24-30, Zhang teaches that the transmission of the LSAs to network devices in a router’s network area. The router advertises the LSAs to specific areas. In column 3, line 40-column 4, line 22, Zhang teaches that, based on information received from the LSAs, each router calculates routes to various destinations in the network.”

With respect to Examiner’s Argument A, Applicant disagrees with the Examiner’s conclusion that one or ordinary skill in the art would interpret differing forwarding data as being somehow equivalent to differing forwarding rules. In particular, Applicant submits that the generic definition of “rule” as “a prescribed guide for conduct or action” is insufficient to form a basis for determining the broadest reasonable interpretation of the claims in light of the specification. Rather, it is submitted that a definition that pertains to the subject matter of the present invention is needed. Paragraph 3 of the specifications states that “[t]he present invention relates to routing protocols for connectionless traffic in a data network, and in particular to policy-based forwarding in Open Shortest Path First (OSPF) networks”, Thus, in order to determine the broadest reasonable interpretation of the claims, it is necessary to obtain

a definition of “rule” (or, more correctly “policy”, since that is the term used in the claims) that pertains to this field of subject matter.

Webster’s On-line dictionary provides a “specialty definition” in the field of “computers” as:

“a formal way of specifying a recommendation, directive, or strategy, e.g. expressed as IF premise THEN conclusion or IF condition THEN action.”

[See. <http://www.websters-online-dictionary.org/definition/rule>]

The person of ordinary skill in the art will recognise that the “IF condition” corresponds with the “match criterion” of each policy described in the present specification; and further that the “THEN action” part of the rule corresponds with the “action” performed by each policy, as described at paragraph 45 of the present specification. Thus the person of ordinary skill in the art will recognise that this “specialty definition” provided by Webster accords very closely with the present specification.

However, the person of ordinary skill in the art will also recognise that the term “rule” is not used in the claims, and further, that the subject matter area “computers” as identified by Webster is related to networks, but it is not at perfect match. As such, the person of ordinary skill in the art will properly seek a definition of the term “policy”, (or more appropriately “policy-based forwarding”), as it pertains to “routing protocols for connectionless traffic in data networks”. In that respect, Wikipedia [See http://en.wikipedia.org/wiki/Policy-based_routing] provides the following definition.

“In computer networking, policy-based routing (PBR) is a technique used to make routing decisions based on policies set by the network administrator.

When a router receives a packet it normally decides where to forward it based on the destination address in the packet, which is then used to look up an entry in a routing table. However, in some cases, there may be a need to forward the packet based on other criteria. For example, a network administrator might want to forward a packet based on the source address, not the destination address. This is also called *source routing*.

Policy-based routing may also be based on the size of the packet, the protocol of the payload, or some other characteristic.” [underlining added]

The person of ordinary skill in the art will recognise that the “specialty definition” of the term “rule” provided by Webster (i.e. “IF condition THEN action.”) does not conflict with the more detailed information found in the Wikipedia description of policy-based routing.. Further, the person of ordinary skill in the art will notice that the Wikipedia description makes an explicit distinction between packet forwarding based on the use of routing (forwarding) tables and policy-based routing. Specifically, in packet forwarding based on the use of routing (forwarding) tables , the router “decides where to forward [the packet] based on the destination address in the packet, which is then used to look up an entry in a routing table”. On stark contrast, in policy-based routing, packets are forwarded based on other criteria, such as the source address, the size of the packet, the protocol of the payload, or some other characteristic.

As such, the person of ordinary skill in the art will recognise that policy-based forwarding is an alternative to conventional packet forwarding using forwarding tables that does not involve use of the normal packet forwarding tables. The reason for this distinction is obvious: forwarding tables route packets based on their destination address; whereas policy-based forwarding routes packets based on (any) other criteria, and so cannot be accommodated by the forwarding tables.

In light of the foregoing, it is submitted that one of ordinary skill in the art would not interpret forwarding data as differing forwarding “rules”, as proposed by the Examiner, since the forwarding data cannot route packets based on any criteria other than the destination address, whereas forwarding policies (rules) do.

With respect to Examiner’s Argument B, Applicant respectfully disagrees.

As an initial matter, the Examiner assertion that “the propagation of LSAs is clearly taught by Zhang using routing tables generated by each router” is not understood. The fields of

a standard LSA header is illustrated in FIG. 3a and described in some detail at paragraph 39 of the present specification. It will be seen that the conventional LSA does not contain a destination address, and so it is indeed impossible to route a conventional LSA using conventional routing tables. Zhang does not teach or suggest any modifications to either the conventional LSA header or convention routing table that would enable LSA forwarding in the manner proposed by the Examiner. In fact, Zhang teaches directly away from such modifications, by explicitly teaching that conventional LSA flooding techniques are used. In particular, at column 3, lines 24-27, Zhang teaches that:

“Using the link state routing techniques described above, each router in FIG. 1 generates Link State Advertisements (LSAs) and transmits the LSAs to other network devices in the router's network area.”

The only such description of “link state routing techniques” provided by Zhang is located at col. 1, lines 30-40, thus:

“The link state information is distributed to network nodes using a series of Link State Advertisements (LSAs) originated by routers and other nodes in the network. For example, a router may advertise LSAs into the network area in which the router resides. These advertised LSAs may indicate that the router has connections to one or more network nodes. These LSAs are received by other routers and nodes in the network. Thus, the other routers and nodes learn of the connections described in the advertised LSAs. All routers in the network may generate and advertise similar LSAs.”

The person of ordinary skill in the art will recognise that this is a description of conventional LSA flooding behaviour, in which a node sends LSAs to every neighbouring node within the nodes' network area. As is well known in the art, forwarding tables are not used in this operation. Zhang explicitly teaches that conventional LSA flooding techniques are used, and so teaches directly away from “the propagation of LSAs ... using routing tables generated by each router”.

Applicant agrees with the Examiner's statement that, "In column 3, lines 24-30, Zhang teaches that the transmission of the LSAs to network devices in a router's network area." However, Applicant submits that the person of ordinary skill in the art will recognise that the flooding of LSAs to every node in the node's network area neither requires nor implies the use of forwarding tables or the forwarding data in them. Instead, the router can simply send each LSA to each of its output ports; irrespective of which nodes or network addresses might be reached through those ports. Limiting such flooding behaviour to the router's network area would be a simple (and inherent) consequence of the fact that the router's output ports are only connected to nodes within the router's network area. Again, nothing in this operation requires or implies the use of forwarding tables or the forwarding data in them.

Finally, Applicant agrees with the Examiner that "Zhang teaches that, based on information received from the LSAs, each router calculates routes to various destinations in the network.". However, the relevance of this teaching to the subject matter of the present claims is not understood. The obvious fact a router uses the content of received LSAs to calculate routes to destinations in the network does not appear to be related to the methods by which LSAs are routed through the network.

As noted above, Zhang explicitly teaches that conventional link state protocol methods are used for advertising LSAs within the network. Since Zhang provides no teaching or suggestion of policy based forwarding of LSAs, and furthermore provide no teaching or suggestion that different LSA forwarding policies may be implemented in different routers, it follows that Zhang cannot support a rejection of claims under 35 U.S.C. § 102(e).

In light of the foregoing, it is submitted that the presently claimed invention is clearly distinguishable over the teachings of the cited references, taken alone or in any combination. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

Respectfully submitted,
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